

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (original): A component of a plasma reactor chamber for processing a semiconductor workpiece, said component comprising a monolithic ceramic piece comprising a mixture of yttrium aluminum perovskite (YAP) and yttrium aluminum garnet (YAG), said mixture being in a ratio of YAP to YAG material sufficiently close to about 60%-40% so that said monolithic ceramic piece has a fracture toughness of at least 2 megaPascal-m^{1/2}.

2 Claim 2 (original): The component of Claim 1 wherein said ratio of said mixture is in a range between about 65%-35% and 55%-45% of YAP to YAG, respectively.

3 Claim 3 (original): The component of Claim 1 wherein said ratio of said mixture is in a range between about 70%-30% and 50%-50% of YAP to YAG, respectively.

4 Claim 4 (original): The component of Claim 1 wherein said ratio is in mole percentages.

5 Claim 5 (original): The component of Claim 1 wherein said ratio is approximately 60%-40% of YAP to YAG in mole percentages.

6 Claim 6 (original): The component of Claim 1 wherein said ratio is such that said fracture toughness is about 3.6 megaPascal- $m^{1/2}$.

1 Claim 7 (currently amended): A component of a plasma reactor for processing a semiconductor workpiece, said component comprising a monolithic ceramic piece comprising a mixture of yttrium aluminum perovskite (YAP) and yttrium aluminum garnet (YAG), said mixture being in a ratio of YAP to YAG material so that said monolithic ceramic piece has a fracture toughness sufficient to be machinable, said mixture being formed from a mixture of yttria powder and an alumina powder in a ratio of yttria to alumina powders lying within a range between 50%-50% and 38%-62% mole percentage.

8 Claim 8 (original): The component of Claim 7 wherein said ratio of said mixture is in a range between about 65%-35% and 55%-45% of YAP to YAG, respectively.

9 Claim 9 (original): The component of Claim 7 wherein said ratio of said mixture is in a range between about 70%-30% and 50%-50% of YAP to YAG, respectively.

10 Claim 10 (original): The component of Claim 7 wherein said ratio is in mole percentages.

11
Claim 11 (original): The component of Claim 7 wherein said ratio is approximately 60%-40% of YAP to YAG in mole percentages.

12
Claim 12 (original): The component of Claim 7 wherein said ratio is such that said fracture toughness is about 3.6 megaPascal- $m^{1/2}$.

13
Claim 13 (original): The component of Claim 7 wherein said component comprises one of: (a) an annular ring of said plasma reactor chamber, (b) a wall of said plasma reactor chamber.

Claim 14 (canceled)

14
Claim 15 (currently amended): A component of a plasma reactor chamber for processing a semiconductor workpiece, said component being a monolithic ceramic piece constituting a mixture of yttrium aluminum perovskite (YAP) and yttrium aluminum garnet (YAG), said mixture being formed from a mixture of yttria powder and an alumina powder in a ratio of yttria to alumina powders lying within a range between 50%-50% and 38%-62% mole percentage.

15
Claim 16 (original): The component of Claim 15 wherein said mixture is in a ratio of YAP to YAG material sufficiently close to about 60%-40% so that said monolithic ceramic piece has a fracture toughness of at least 2 megaPascal- $m^{1/2}$.

16

Claim 17 (currently amended): A component of a plasma reactor chamber for processing a semiconductor workpiece, said component being a monolithic ceramic piece constituting a mixture of yttrium aluminum perovskite (YAP) and yttrium aluminum garnet (YAG) formed from a mixture of yttria and alumina powders, the ratio said powders in said mixture being within a range between one ratio at which at least nearly pure yttrium aluminum perovskite is formed and another ratio at which at least nearly pure yttrium aluminum garnet is formed, said ratio lying in a range between 50%-50% and 38%-62% mole percentage.

17

Claim 18 (original): The component of Claim 17 wherein said component is a ceramic ring surrounding a wafer support pedestal within the chamber.

18

Claim 19 (original): The component of Claim 17 wherein said component is a wall of the chamber.

19

Claim 20 (original): The component of Claim 18 wherein said piece comprise an array of YAG grains and YAP grains in which cracks propagate transgranularly across the YAG grains and intragranularly within the YAP grains.